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Remarks

Claims 1, 4 and 11-20 have been cancelled. Claims 3, 7, 8 and 10 have been amended. Upon entry of the above amendments, claims 2, 3 and 5-10 will remain pending and under consideration in the above-identified application.

Claims 11-20 have not been examined, but were instead withdrawn from consideration pursuant to a restriction requirement. Accordingly, Applicant expressly reserves the right to prosecute claims 11-20 and/or similar subject matter in a divisional application.

Rejection Under 35 U.S.C. §102

Claims 2-4 and 7-10 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Munoz et al. (U.S. Patent No. 7,501,091).

The claims have been amended to patentably distinguish over the teaching of Munoz et al. Specifically, the claims have amended to require that “the solid particulate filler is a functionalized filler selected from clays, synthetic fibers, aluminum hydroxide, calcium silicate, zinc oxide, glass fiber, silica, alumina, and alumina-silica.” The Munoz et al. patent does not disclose any of the specifically listed particulate fillers, but instead discloses that the particles should be electrically conductive particles, preferably conductive pigment particles, and most preferably carbon black. It is an essential feature of the Munoz et al. invention to include a layer of electrically conductive modified particles (see Col. 2, lines 32-33).

It is specifically stated (Col. 2, lines 33-35) that “an electrical pathway exists through the layer containing the conductive modified particles.” Non-conducting materials may be included in the sensor array disclosed by Munoz et al. However, the functionalized particles must be electrically conductive. In contrast, Applicant’s pending claims are limited to functionalized fillers “selected from clays, synthetic fibers, aluminum hydroxide, calcium silicate, zinc oxide, glass fiber, silica, alumina, and alumina-silica,” all of which are not electrically conductive. Accordingly, Munoz et al. does not teach the claimed invention, and rather, teaches against the claimed invention by incorporating electrically conductive

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functionalized particles instead of the electrically non-conducting particles required in the pending claims.

In view of the above amendments, it is respectfully submitted that the claims are not anticipated by Munoz et al., and would not have been obvious based on the teachings of Munoz et al. Accordingly, the rejection under 35 U.S.C. § 102(e) based on Munoz et al. should be withdrawn.

Rejection Under 35 U.S.C. § 103

Claims 5 and 6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Munoz (U.S. Patent No. 7,501,091) in view of Zheng, "X-ray Characterizations of Polyethylene Polyhedral Oligomeric Silsesquioxane Copolymers" (2001).

In the rejection, it is alleged that it would have been obvious to the person of ordinary skill in the art at the time that the time the invention was made to "modify Munoz to employ a POSS functional group on the carbon black to provide a more stable polymeric matrix."

It is respectfully submitted that the rejection is defective for the reasons generally set forth above with respect to claims 2, 3, and 7-10. Specifically, Munoz et al. disclose that the functionalized particles are electrically conductive particles, preferably electrically conductive pigment particles, and most preferably carbon particles (see Col. 5, lines 19-50). There is not the slightest suggestion in either Munoz et al. or Zheng for a composite as claimed in which functionalized fillers selected from clays, synthetic fibers, aluminum hydroxide, calcium silicate, zinc oxide, glass fiber, silica, alumina, and alumina-silica are dispersed in a polymer matrix. Rather, throughout the Munoz et al. patent, it is repeatedly stated that the functionalized particles should be electrically conductive to provide a chemiresistive sensor (i.e., a sensor wherein contact with fluids causes a change in electrical resistance). The disclosed Munoz et al. sensors could not function at all in the absence of conducting material.

Accordingly, the person of ordinary skill in the art would not have had a reason to combine the copolymers of Zheng with the functionalized electrically conductive particles

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of Munoz et al. However, if such combination were made, the result would be functionalized electrically-conductive particles dispersed in a polyethylene polyhedral oligomeric silsesquioxane copolymer matrix. Such composite material would not contain the required functionalized filler selected from clays, synthetic fibers, aluminum hydroxide, calcium silicate, zinc oxide, glass fiber, silica, alumina, and alumina-silica. Accordingly, the subject matter of claims 5 and 6, which requires a solid particulate filler that is a functionalized polyhedral oligomeric silsesquioxane (an electrically non-conductive floor) would not be obvious based on the teachings of Munoz et al. in view of Zheng. Thus, a withdraw of the rejection is proper.

Conclusion

In view of the above amendments and remarks, it is submitted that the application is in condition for allowance and notice of the same is requested.

Respectfully submitted,

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Date

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